

**EFFECTS OF FOREIGN EXCHANGE RISK ON FIRM VALUE OF
COMMERCIAL STATE CORPORATIONS IN KENYA**

DAVID MBITHI MATOLO

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DECLARATION

BY CANDIDATE

This project is my original work and has not been presented to any examination body.

Signature:..... Date:

Name: DAVID MBITHI

Registration: D61/80205/2012

BY SUPERVISOR

This research project has been submitted for examination with my approval as University Supervisor.

Signature:..... Date:

DR. ADUDA JOSIAH O.

Dean – School of Business

University of Nairobi

DEDICATION

To my loving family for understanding, encouragement and continuous support throughout my studies.

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ABSTRACT

Foreign exchange risk constitutes one of the most common forms of risk that firms in the international arena encounter and, in recent years, the management of this risk has become one of the key factors in overall financial management. The risk helps investors determine appropriate expected returns from investment, firm value is thus affected by the risk a firm is exposed to since it affects the size of future cash flows. Appreciating foreign exchange risks and measuring firm value is a crucial step to better managing and improving the performance of firms. Companies that choose not to manage foreign exchange risk may be assuming that exchange rates will remain at their present levels or move in a direction that will be favourable to the company. The study sought to investigate the effects of foreign exchange risks on firm value for commercial state corporations in Kenya. The study applied a descriptive study that was aimed at establishing the effect of foreign exchange risk on the value of a firm, the research design used was cross-sectional design, which was a study in which data was gathered systematically over a period of time in order to answer a research question. The study targeted 55 commercial state corporations as per the Report of The Presidential Task force on Parastatals Reforms. Data was obtained from secondary sources such as the financial statements of the commercial state corporations under analysis. A multiple regression model was employed. A computer package SPSS (Statistical Package for the Social Sciences) version 22 was used to solve the multiple regression equation used in this study. From the regression model, the study found out that there were factors influencing the firm value of commercial state corporations in Kenya, which are foreign exchange risk, firm size, leverage, growth options and financial constraints. They influenced firm value of commercial state corporations in Kenya positively or negatively. The study found out that the intercept was 0.645 for all years. The five independent variables that were studied (Foreign Exchange risk, Firm size, Leverage, Growth Options and Financial constraints) explain a substantial 65.4% of firm value of commercial state corporations in Kenya as represented by adjusted R² (0.654). The study therefore concludes that foreign exchange risk positively and significantly influences the firm value for commercial state corporations in Kenya.

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ABBREVIATIONS

| | |
|--------------|---|
| CAPM: | Capital Asset Pricing Model |
| FCF: | Future Cash Flows |
| IFE: | International Fisher Effect |
| NPV: | Net Present Value |
| NSE: | Nairobi Stock Exchange |
| PPP: | Purchasing Power Parity |
| SML: | Security Market Line |
| SPSS: | Statistical Package for the Social Sciences |
| UK: | United Kingdom |
| USA: | United States of America |

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Foreign exchange risk constitutes one of the most common forms of risk that firms in the international arena encounter and, in recent years, the management of this risk has become one of the key factors in overall financial management (Werner and Brouthers, 2006). In most developing countries there is the dearth of capital for investment which has affected the economic situation of these nations. Foreign exchange rates are needed to reduce the difference between the desired gross domestic investment and domestic savings. Engel (2005) assert that foreign exchange rate is expected to contribute to economic growth not only by providing foreign capital but also by crowding in additional domestic investment. By promoting both forward and backward linkages with the domestic economy, additional employment is indirectly created and further economic activity stimulated (AL Samara, 2009).

Modern finance and economics have been concerned with the effects of changes in exchange rates on returns and cash flows of state corporations (Bergen, 2010). After the collapse of the Bretton Woods System in the mid-1970s, most corporations throughout the world viewed exchange rates as significant risk factor (Black and Tarassova, 2010). This is especially the case in those industries that have been subject to substantial globalisation (Bartram, Brown and Fehle, 2010). The changes in exchange rates have an impact on domestic and international corporations that can be defined as the 'exposure' of the corporation to fluctuating foreign exchange rates. The exposure to foreign exchange rate fluctuations usually manifests itself as an impact on: (i) the value of net monetary assets with fixed nominal payoffs' and (ii) the value of real assets held by the firm (Bergen, 2010).

It is widely recognised that the value of the firm is closely related to the performance of its future cash flows. The future cash flows (FCF) approach is used to assess and compare the value creation and performance of companies. Gentry (2012) comment that the performance of a firm's net cash flow over time provides powerful signals connecting its financial health; thus, the long-run patterns of a few key cash flow components can be used to assess a company's strategic performance. In their overall assessment, Gentry et al. maintains that the most important relationship among the cash flow components is the link between net investments and net operating cash out flows, and those cash flow components are closely associated with financial health and strategic performance of a firm. The question of whether changes in cash flow components trigger action (or inaction) remains, at this point, an empirical question

As many developing countries have or are considering implementing changes in their development strategies, now is an opportune time to investigate the issue of weather alteration, in exchange rate arrangement have an effect on economic growth or to what extent exchange rate volatility may be responsible for variation in the rate of economic production. Because such moves are accompanied by increase in the volatility of both, nominal and real exchange rates (Stancik, 2007).

Foreign exchange rates have been fixed by government action rather than determined in the marketplace for most of the twentieth century (Defrenot and Yehoue, 2006). Before World War I the values of the world's major currencies were fixed in terms of gold, while for a generation after World War II the values of most currencies were fixed in terms of the U.S. dollar. However, some of the world's most important exchange rates change frequently (Barnett and Ho Kwag, 2007).

Equilibrium in exchange rate is determined in the foreign exchange market at a point where demand for and supply of foreign currency equates. Demand for a currency comes from net export while supply of the currency comes from net foreign investment. Any change in demand for and supply of currency effect its value just like a good market that is if demand for a currency increases its value (exchange rate) will be increased while increase in supply of the currency will reduce its value(exchange rate) in the foreign exchange market. In recent decades, it is observed a rapid development of global capital market and financial services. In these circumstances, the dynamics of exchange rates have an increasing impact on the overall macroeconomic situation in countries around the world (Civcir, 2011). This applies particularly to small open economies, where domestic monetary policies don't have an impact on world interest rates. For these countries, the exchange rate becomes a major tool to adapt to changing external conditions (Black and Tarassova, 2010).

Each country has a currency in which the prices of goods and services are quoted the dollar in the USA, the euro in France, the pound sterling in the UK, the yen in Japan, and the kroner in Denmark and hundreds in a line (Closterman and Schnatz,2010). Foreign exchange rates play a central role in international trade because they allow the comparison of the prices of goods and services produced in different countries. One of the major elements of monetary system of a country is the exchange rate, where the exchange value of national currency of one country expressed in monetary units of another country (Opoku-Afari et al., 2004). Foreign currency risks arise whenever a company has an income or expenditure or an asset or liability in a currency other than that of the balance-sheet currency. Indeed exposures can arise even for companies with no income, expenditure, asset or liability in a currency different from the balance-sheet currency. When there is a condition prevalent where the exchange rates become extremely volatile the exchange rate movements destabilize the cash flows of a business

significantly. Such destabilization of cash flows that affects the profitability of the business is the risk from foreign currency exposures.

1.1.1 Foreign Exchange Risk

Finance theory suggests that risk management can increase the value of the firm by addressing the underinvestment problem. The basic idea is that, by hedging financial risks with derivatives, companies reduce the variability of their cash flow, thereby ensuring they will have sufficient funds to undertake all promising projects. This idea is supported by a Youngblood (2004), who demonstrated that when the costs of external capital include deadweight costs, companies that require outside financing will under invest when internal operating cash flows are low (Rosell, 2012).

Risk management might enlarge the value of the firm in two ways: Free Cash Flows can become larger or the discount rate becomes lower. The rise of the amount of free cash flows can occur in several ways: more money can be led to those investments that generate the highest return. Stability in cash flows due to risk management makes it possible to keep investments in place, instead of having to abandon these in case money is needed. According to Hagelin and Pramborg (2004), management of foreign exchange risk increases shareholders value through enhanced business performance and the reduction of the firms' cost of capital. Further in the event of corporations successfully managing its foreign exchange risks the benefits received from such effective execution will have a long-term positive impact in creating value for the corporations' shareholders (Tofallis, 2009).

1.1.2 Firm Value of State Corporations

Firm Value is an economic measure reflecting the market value of a whole business i.e. the value to be allocated to the company's shareholders and debt holders. It consists of not just the Price (i.e., the amount to be paid for the business) but also the associated Terms and the Deal

Structure. Different values for a business can exist because of different operating assumptions, deal structures, payment terms, etc., not due to use of different valuation methods. According to Pandey (2009), in the current financial theories, the value of a firm can be calculated by several methods. One of the most-used, most acclaimed methods is the Net Present Value (NPV) method. This method discounts the present and future cash flows of the company to a present value. The discount rate is defined as the rate of return of an average investment in the market with the same risk profile as the investment that is subject of the NPV method.

Value maximisation theory states that managers should make all decisions that are geared towards increase of the total long run market value of the firm (Shapiro and Rutenberg, 2006). Total value is the sum of the value of all financial claims on the firm - including equity, debt, preferred stock and warrants. International Fisher Effect Theory has advocated a number of different ways in which corporate management may serve to enhance shareholder/firm value. First, companies are likely to be better placed than shareholders to manage their risks, for reasons of information asymmetry and superior accessibility to risk management instruments as mentioned earlier (Bartov and Bodnar, 1994).

Jensen (1996) argues that higher leverage without any changes in equity has little effect on stock prices. This suggests the existence of asymmetric information effects of changes in debt. Fama (1998) question the validity of the tax effects hypothesis and consider variables in their cross-sectional regressions, which capture all the information on pre-tax expected net cash flows in financing decisions. They find a firm's value is negatively related to debt and positively related to dividends and conclude that information effects on profitability obscure any tax effects.

In a more practical approach, business is all about creating value, as supported by the "value-based Management, which is essentially a management approach whereby companies" driving

philosophy is to maximise shareholder value by producing returns in excess of the cost of capital (Closterman and Schnatz, 2010). This value creation process is only possible with the support of different stakeholder groups. It is worthwhile to note; despite the fact that the objectives of the different stakeholder groups do not always converge, they realise the importance of working together to realise the multiple goals of the firm as the only way to attain some of their own objectives (Shapiro, 2007).

At first sight, literature suggests a great distinction between the stakeholder and the shareholder approach. However, when we look at the interpretation and observations of Rosell (2012) according to the shareholder theory, we detect a great similarity between his viewpoint and that of (Bradbury, 2009) point out that the shareholder and the stakeholder principle do not conflict if the issue of the measurement of value and the distribution of value are looked at separately. They state the belief that the quest to create value is important for all organisations. The efficient use of resources should involve ensuring that an economic return in excess of the cost of capital is achieved.

1.1.3 Foreign Exchange Risk and Firm Value

There is growing literature linking foreign exchange risk to firm value, there is equally a growing diversity of results (Choi and Prasad, 2005). The diversity of results can be partly explained by differences in the theoretical perspectives applied, selected research methodologies, measurement of firm value and conflicting views on general employee involvement in decision making and, in part, to the contextual nature of the individual firm (Levich, 2001). Even studies based on the integrative models of employee involvement; incorporating different theoretical perspectives and various employee attributes, provide inconclusive results, suggesting that currency risk management has, at least, an indirect effect on company performance (Razin and Collins, 2007).

Previous research studies have provided a link between currency risk management and firm value (Jorion, 2011; Adler and Dumas, 2010; Eiteman, 2006) with very little conclusive results. Others (Lim, 2006) have shown that firms that have robust currency risk management frameworks have higher firm value. The main characteristics of good risk management identified in these studies include; leadership of the risk team, adequate compensation of the risk team and compliance with laws and best practice. There is a view that companies with risk management departments are better corporate performers. In recent times on the contrary, emphasis has geared towards general employee training in currency risk management. Oxelheim (1997) contend that risk management departments without well trained personnel to man the departments are less effective and the company will many a time be prone to such currency risks.

The use of foreign exchange risk management strategies results in reduced foreign exchange exposure hence minimal losses. According to Jorion (2011) changes in exchange rate can influence firm current and future expected cash flows and ultimately, stock prices. The direction and magnitude of changes in exchange rate on firms value are a function of a firm's corporate hedging policy which indicates whether the firm utilizes operational hedges and financial hedges to manage currency exposure and the structure of its foreign currency cash flows (Youngblood, 2004).

1.1.4 Commercial State Corporations in Kenya

Commercial state corporations' governance can broadly be defined as the systems and processes by which a government manages its affairs with the objective of maximizing the welfare of and resolving the conflicts of interest among the stakeholders (Bradbury, 2009). In developing countries, the commercial state-owned enterprise sector is an integral part of socio-economic activity. Most state owned enterprises were established to fulfil the social objectives of the state rather than to maximise profits. However, rising stakeholder expectations have

forced governments in many countries to reform the corporate governance systems of commercial state-owned enterprises, with expectations of improving their operations to reduce deficits and to make them strategic tools in gaining national competitiveness (Shapiro, 2007).

Commercial state corporations in Kenya are formed by the government to meet both commercial and social goals. They exist for various reasons including: to correct market failures, to exploit social and political objectives, provide education, health, redistribute income or develop marginal areas. According to Guidelines on Commercial State Corporations from the Office of the President (2010), to date there are 178 operational state corporations in Kenya being classified into eight broad functional categories based on mandate and core functions. The eight categories are Financial; Commercial; Regulatory; Public Universities; Training and Research; Service; Regional Development Authorities; and, Tertiary Education (State Corporations advisory Circular, 2010).

In the past the efforts at classification of current State Corporations was for purposes of determination of remuneration. In 1992 State Corporations were placed in various classes ranging from “A” being the highest to “F” as the lowest (Wekesa, 2011). In 2004 the Government recategorized State Corporations once more for purposes of remuneration into: financial institutions, commercial/manufacturing; regulatory bodies; public universities; research and training institutions; service corporations; regional development authorities and; tertiary education and training institutions. The regulatory regime and administrative framework however remained intact.

A commercial function according to Report of The Presidential Taskforce on Parastatal Reforms (2013) is a function the dynamics of which are governed by a competitive profit driven market and that can be performed commercially but also serves a strategic socio-economic purpose (Abiero, 2011). State Corporations therefore include: Commercial State Corporations

which are 34 in number; and b. Commercial Corporations with strategic functions which are 21 in number as defined through the national development planning process. These entities are incorporated and managed under the Companies Act Chapter 486.

1.2 Research Problem

Chepkairor (2007) state that the value of the firm is the central focus of all of its stakeholders since knowing what creates value and what a firm is worth is essential to making wealth creating decisions. In determining the value of a firm focus is given to the size of future cash flows, the timing of those future cash flows and the uncertainty associated with those cash flows. The risk helps investors determine appropriate expected returns from investment, Firm value is thus affected by the risk a firm is exposed to since it affects the size of future cash flows. Appreciating foreign exchange risks and measuring firm value is a crucial step to better managing and improving the performance of firms. Allayannis, Ihrig, and Weston (2011) assert that exchange rate risk management is an integral part of every firm's decisions about foreign currency exposure. It requires understanding of both the ways that the exchange rate risk could affect the operations of economic agents and techniques to deal with the consequent risk implications.

Companies that choose not to manage foreign exchange risk may be assuming that exchange rates will remain at their present levels or move in a direction that will be favourable to the company. However according to Antonopoulos (2011), when dealing in foreign currencies, fluctuations in the exchange rates are bound to occur and this affects the firm's expected future cash flows. This leads to the question on whether hedging increases firm value. Literature has not yet reached a consensus as to whether hedging has an impact on firm value and evidence is somewhat mixed. Some empirical studies support the hypothesis but some do not yet others argue that for hedging to add value, it depends on the types of risk to which a firm is exposed. When a company with transactional foreign exchange exposure suffers a business interruption

loss during an extended period and when relevant exchange rates fluctuate, it is important to appreciate the impact that exchange rates can have on lost sales, cost of sales and gross profit. The potential for over- or under stating a profit or loss is not limited to the percentage movement in the exchange rates movements. Exchange rate fluctuations affect operating cash flows and firm value through translation, transaction, and economic effects of exchange rate risk (Choi et al., 2006). Income based on fair values reflects income volatility more than historical cost-based income. It is also found that income is (not) more volatile with the recognition of unrealized fair value gains/losses on financial instruments.

Many studies suggest that risk management has an impact on firm value. Areba (2011) and Abiero (2011), through their research work show this. Wekesa (2011) however found evidence that the use of currency derivatives is not significant for firm value. Abor (2011) found that the impact on firm value depends on the form of hedging used by affirm. Even though studies have been conducted on the exchange rate regimes and the implications for macroeconomic management as well as managing foreign exchange risk, very little has been done on the study of the foreign exchanges rates effects on firm's value in Kenya.

It is in this context that this research is to evaluate the effect that variations in the exchange rate have in the firm values of the Kenya state corporations. This research attempted to answer the question what is the impact of foreign exchange risks on firm value?

1.3 Objective of the Study

The study aimed to investigate the effects of foreign exchange risks on firm value for commercial state corporations in Kenya.

1.4 Value of Study.

The study will help state corporate managers to reduce non-cash flows risk because of local currency devaluation, The study incorporates the effect of different currency exchange rates to the world hard currencies namely the United States Dollar, the Euro, the Sterling Pound, the Japanese Yen and others like the South African Rand. Foreign exchange risk for such firms affects not only the values of foreign operating cash flows, but also the foreign asset and liability values reported unconsolidated financial statements.

Understanding of the effect of foreign exchange rates on firm's financial performance is equally important for the financial investors for computing the amount of risk associated with such variation and consequently the risk involved in their investment decisions. The result of the study will therefore offer investors a foundation upon which to make strategic decisions and choose investment strategy.

The study will help shareholders understand and learn the effects of foreign exchange on the firm's profits. Since this study assesses the existing capacity in the country for foreign currency risk management, its findings generate more knowledge in this area.

The findings of the study are of great importance to help researchers, it adds to the body of empirical literature on the effect of exchange rate to firms financial performance; Among the areas of importance are: The study will enhance export and import terms to help businesses remain competitive.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presented the literature review on the impact of foreign exchange risks on firm value. It summarized the information from other researchers who have studied the field. The review covers both the theoretical and empirical reviews of the existing literature. The theoretical review helps in understanding of the current body of knowledge on the research topic while the empirical review help in understanding what other related studies have found and suggested.

2.2 Theoretical Review

There are various theories that suggest the irrelevance of managing the risk of change in exchange rates. These theories suggest that changes in exchange rates are evened out in some form or the other.

2.2.1 International Fisher Effect Theory

This model was developed by Irving Fisher in his book *The Theory of Interest* (1930). It uses market interest rates rather than inflation rates to explain why exchange rates change over time. The International Fisher effect states that exchange rates changes are balance out by interest changes. The Fisher theory simply argues that real interest rates across countries were equal due to the possibility of arbitrage opportunities between financial markets which generally occurs in the form of capital flows. Real interest rate equality implies that the country with the higher interest rate should also have a higher inflation rate which, in turn, makes the real value of the country's currency decrease over time. The relationship between relative interest rates and foreign exchange risks is explained within the interest rate theory of exchange rate

expectations. Nominal interest rate differentials between two countries tend to reflect exchange rate fluctuations. Giddy (1997) called this the international Fisher effect, a close relationship to the Fisher effect, a phenomenon observed by Irving Fisher (1896). If the international Fisher effect holds, interest rates in appreciating currencies tend to be low enough, and in depreciating currencies high enough, to offset expected currency gains and losses.

The International Fisher Effect (IFE) theory suggests that foreign currencies with relatively high interest rates will tend to depreciate because the high nominal interest rates reflect expected rate of inflation (Madura, 2010). Does the interest rate differential actually help predict future currency movement? Available evidence is mixed as in the case of PPP theory. In the long-run, a relationship between interest rate differentials and subsequent changes in spot exchange rate seems to exist but with considerable deviations in the short run (Hill, 2004). The international Fisher effect is known not to be a good predictor of short-run changes in spot exchange risks (Cumby and Obstfeld, 1981).

2.2.2 Purchasing Power Parity Theory

The Purchasing Power Parity (PPP) theorem explains the relationship between relative prices of goods and exchange rates. The PPP theorem propounds that under a floating exchange regime, a relative change in purchasing power parity for any pair of currency calculated as a price ratio of traded goods would tend to be approximated by a change in the equilibrium rate of exchange between these two currencies. The relationship between relative interest rates and foreign exchange rates is explained within the interest rate theory of exchange rate expectations. Nominal interest rate differentials between two countries tend to reflect exchange rate fluctuations. Giddy (1997) called this the international Fisher effect, a close relationship to the Fisher effect, a phenomenon observed by Irving Fisher (1896).

If the international Fisher effect holds, interest rates in appreciating currencies tend to be low enough, and in depreciating currencies high enough, to offset expected currency gains and losses. If foreign exchange markets are efficient, then the two theorems must hold. Therefore, foreign exchange rates take into account all expected interest rate and purchasing power differentials (Shapiro and Rutenberg, 1976). As such, critics of foreign currency risk management, argue, there is no exchange risk to justify risk management activity. In further support of the argument of irrelevancy of foreign exchange risk management, critics also bring in the Capital Asset Pricing Model (CAPM).

The logic being, even if foreign exchange risk existed, it would be either systematic or unsystematic risk. Unsystematic risk can be diversified away by investors themselves in accordance with portfolio theory by adding low-risk, low- return securities to the portfolio.

Systematic risk, on the other hand, is already discounted in asset pricing. Therefore, if foreign exchange pricing is in line with CAPM, then a firm cannot increase its value through hedging. Movement of its share price will be along the Security Market Line (SML) only, which takes account of the systematic risk (Adler and Dumas, 2010). PPP is closely related to the so-called “Law of One Price,” which states that a commodity will sell for the same price (adjusting for differences in transaction costs) regardless of where it is purchased. The relationship between PPP and the Law of One Price is complex. One aspect of this relationship is that if one assumes that; the Law of One Price holds, the services components of economies are negligible, and transaction costs of importing goods are negligible, then PPP follows as a logical consequence.

2.2.3 Contingency Theory

This theory contends that there is no one best way of organizing and that an organizational style that is effective in some situations may not be successful in others (Youngblood, 2004). That is, optimal organization style is contingent upon various internal and external constraints.

Four important ideas of Contingency Theory are: There is no universal or one best way to manage, the design of an organization and its subsystems must 'fit' with the environment, effective organizations not only have a proper 'fit' with the environment but also between its subsystems and the needs of an organization are better satisfied when it is properly designed and the management style is appropriate both to the tasks undertaken and the nature of the work group (Rosell, 2012).

Hagelin and Pramborg (2004), in her study of the effect of market risk management on company value among the state ministries found that hedging does add value to the company however not all hedging activities are value adding. In her research it was found that usage of commodity and interest rate instruments do not add value to the share price of firms but it is only the use of exchange rate instruments where value is derived. Basing her research on the sixty listed firms at the NSE she showed that not all hedging activities add value but the form of hedging used matters (Tofallis, 2009). Firm value is thus contingent on the hedging strategy used. Contingency theory will also apply in this research to determine whether all risk management practices yield the same result or whether the effect on firm value depends on the hedging strategy used (Wekesa, 2011).

2.3 Determinants of Firm Value for Commercial State Corporations

2.3.1 Leverage

Higher financial leverage, generally associated with high asset base, means lower average cost of capital and hence higher value (Giddy and Dufey, 1992). As such businesses can command a respectable price if a cash flow lender can be found, or if the Seller is willing to finance the transaction. Business with low financial leverage (generally associated with a low asset base, or an asset base with low borrowing capacity, or a tight lending market) will command a lower price due to lack of lower cost borrowing. If there are tax shield with relation to the payment

of interest, or the debt soothes the dispute between shareholders manager and creditor, the impact is positive. If an increase in the leverage presents an increase in the likelihood of incurring payment of bankruptcy costs, the impact is negative (Razin and Collins, 2007).

According to free cash flow hypothesis, debt decreases the amount of cash available to managers, hence reducing their possibilities for wasting corporate resources (Lim, 2006). In such way leverage serves as a commitment and incentive mechanism it induces managers to pay out cash to firm's investors and basically minimizes agency costs of external equity (consumption of perquisites, shirking from duties and undertaking negative NPV projects). Eventually, issuing debt instead of equity lowers agency costs and therefore increases firm value (Simwaka, 2004).

2.3.2 Profitability

According to pecking order theory, more profitable companies are likely to have low debt levels because they generate cash internally. Consequently, the relationship between debt and profitability will be negative as concluded by Eitemann (2006). Profitability is the primary goal of all business ventures (Levich, 2001). Without profitability the business will not survive in the long run. Profitability results from the excess of income over expenses. A firm that is highly profitable has the ability to reward its owners with a large return on their investment. The firms therefore trade at a premium and are likely to generate a higher valuation (Shapiro, 2006).

2.3.3 Risk Management

Risk management entails assessing and managing the corporation's exposure to various sources of risk through the use of financial derivatives, insurance and other activities. Business risks can impact a company's cash flows as well as its general health (Choi and Prasad, 2005). In the event of corporations successfully managing its foreign exchange risks the benefits

received from such effective execution will have a long-term positive impact in creating value for the corporations' shareholders.

Management of foreign exchange risk increases shareholders value through enhanced business performance and the reduction of the firms' cost of capital. Since market value is conditioned by the company results, the level of risk exposure can cause changes in its market value (Jorion, 2011).

2.3.4 Growth Options

Adler and Dumas (2010) argued that future investment affect firm value. A firm with higher growth options will have a higher value as it's favorable to investors who have higher prospects of recovering their investment. If a firm has lower growth options its likely to be erased by competitors leading to eventual collapse hence a lower value.

2.3.5 Firm Size

Although no clear definition of firm size can be found, it can be measured by the size of corporate book value or the amount of sales. It is believed there is a high correlation between firm size and cash flow which is the foundation for calculating market capitalization (Eiteman, 2006). The size of a company can have a positive effect on financial performance because larger firms can use that advantage to get some financial benefits in business relations.

Large organizations can obtain cheap funding hence a lower rate of capital. This generates a higher market capitalization rate. Oxelheim (1997) observed that ERM usage is positively related to firm size. The larger the organization, the more complex its operations will probably be and the more its exposure to threatening events.

2.3.6 Financial Constraints

Firms facing financial constraints are unlikely to meet their investment obligations. The firm may be paying out more than it is receiving and more likely to go bankrupt (Shapiro, 2006). This implies that in the long run the chances of survival of the company are low and this would yield a lower valuation. On the contrary firms with adequate cash flow are likely to meet their financial obligations on time and hence have a higher value.

2.4 Review of Empirical Studies

Belk (2010) confirmed the existence of a positive and significant relation between the use of currency derivatives and firm value for a sample of UK firms. The authors found a nearly 4.87% hedging premium. Similar result was found by Carter et al. (2006). In the study, the authors showed that hedging with relation to oil prices in the airlines industry is positively related to firm value and the hedging premium reaches over 5%. The authors showed evidence that the greatest benefit of hedging in this sector would be the reduction in underinvestment costs because the fuel price is highly correlated to the investment opportunities in the sector.

There is no evidence on the direct impact of the use of currency derivatives on firm value for emerging markets. Rossi (2002) observed a reduction in the Brazilian firm's foreign exchange exposure in the shift from the fixed exchange regime to the flexible exchange regime. The author verified that this change occurred due to the fact that many firms started using currency derivatives to manage their exchange rate risk and to reduce the currency mismatch in their balance sheets.

Judge (2003) summed up the results of 15 studies on the topic of effect of risk management on the value of the firm. He found low support for the importance of taxes, or the managers' risk aversion, or the presence of bankruptcy costs to determine the use of derivatives. The study also pointed that the results related to the importance of imperfections in the finance market is

mixed. Half of the studies confirmed the existence of a relationship between growth opportunities and the use of derivatives. The authors found strong evidence that scale economies and the volatility of cash flow in foreign currency are important determinants of derivative use. Larger companies, exporting companies or companies with subsidiaries abroad use derivatives more intensively.

Hagelin (2004), in a study of Swedish companies, found evidence that hedging activities increase firm value. They found that companies that use currency derivative are negotiated with premium when compared to those that do not use them. In addition, they showed that if management has an option plan for company's stock, many times, they use hedging tools to protect their remuneration and not the shareholder's. In this case, hedging shows a negative relation with firm value. Also using a sample of Swedish companies, Pramborg (2004) found a positive impact of hedging on firm value in case the firms use it to hedge its transaction exposure and an insignificant impact in case they use it to hedge its translation exposure.

Jim and Jorion (2004) analyzing the behaviour of American companies in the oil and gas sector from 1998 to 2001 found that the impact of using derivatives on firm value is statistically insignificant if not with the signal contrary to the expected.

Chepkairor (2007) investigated the use of currency derivatives for non-financial firms in Kenya from 2003 to 2005. The authors found evidence that the use of currency derivatives is not significant for firm value.

Kurgat (2008) in his analysis of the sample of oil and gas producers observed that hedging would aggregate value only to companies where the commodity risk is secondary and hedging would have a negative impact on the firms where the commodity price is a primary risk. He argued that these results derive from the fact that hedging is a proxy for management quality or agency costs, and once controlling for these facts the hedging effect would be insignificant.

Areba (2011) investigated the effect of foreign risk on the value of companies listed at the NSE. Their findings showed that companies can add to their shareholders value by implementing ERM thus have a competitive advantage over companies that have not implemented ERM or are at earlier stages of implementation. They further showed that regardless of the differences between developed and emerging markets, the implementation of ERM has a positive effect on the value of companies.

Abiero (2011) in her study of the effect of foreign risk on company value among firms listed at The NSE found that hedging does add value to the company however not all hedging activities are value adding. In her research it was found that usage of commodity and interest rate instruments do not add value to the share price of firms but it is only the use of exchange rate instruments where value is derived. Basing her research on the sixty listed firms at the NSE she showed that not all hedging activities add value but the form of hedging used matters.

In a study investigating the relationship between foreign exchange risk management and profitability of airlines in Kenya, Wekesa (2011) found out that foreign exchange rate risk management has a positive impact on the profits of airlines in Kenya. He established that foreign exchange risk accounts for 35% of the variability of the profits of airlines in Kenya hence most airlines had put up ways of mitigating the risk to curb nose diving of their profits.

2.5 Summary of Literature Review

International fisher effect theory suggests that risk management can smooth variability in firm value (Giddy, 1997). The notion that risks are redistributed to those better equipped to handle them is a norm in capital markets. Risk is reduced by hedging which involves buying and selling derivatives and these can decrease the variance of the expected value of the firm. Belk (2010) however showed that with a fixed investment policy in an economy without any friction (transaction costs, agency costs and taxes), in a scenario where all rational investors have the

same access to market prices and to information without any cost, the firm's financial policy will be irrelevant. If the markets are perfect and complete, firm value will be independent of hedging.

In this outline, an investor will be able to eliminate the foreign exchange risk from its portfolio through diversification, eliminating the gains of an active hedging policy by the firm. As discussed above risk management yields different results on the value of a company. Some studies show that it affects firm value while others show that it does not have a significant impact on firm value. Other studies found that managing risk using financial derivatives does affect firm value and even in this case it depends on the form of derivative used.

In light of this, this research will seek to find whether managing foreign exchange risk has any effect on the value of the firm by focusing on the Kenya State Corporations.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter sets out various stages and phases that were followed in completing the study. It involves a blueprint for the collection, measurement and analysis of data. In this stage, most decisions about how research was executed and how respondents were approached, as well as when, where and how the research was completed. Therefore, in this section the research identified the procedures and techniques that were used in the collection, processing and analysis of data. Specifically the following subsections were included; research design, target population, sampling design, data collection instruments, data collection procedures and finally data analysis.

3.2 Research Design

The study applied a descriptive study that was aimed at establishing the effect of foreign exchange risk on the value of a firm, the research design used was cross-sectional design, which was a study in which data was gathered systematically over a period of time in order to answer a research question. It is used when the purpose of the study is descriptive, often in the form of a survey (Nyororo, 2006). Usually there is no hypothesis as such, but the aim is to describe a population or a subgroup within the population with respect to an outcome and a set of risk factors. It is also used when the purpose of the study is to find the prevalence of the outcome of interest, for the population or subgroups within the population at a given time point.

3.3 Target Population

The study targeted all the commercial state corporations in Kenya. The study targeted 55 commercial state corporations as per the Report of The Presidential Task force on Parastatal

Reforms (2013), 34 commercial state corporations and 21 commercial state corporations with strategic functions. The study covered a period of five years between 2008-2013.

3.4 Sample Design

Since the population was small there was no need for sampling rather the whole population of 55 was the sample population.

Table 3.1 Sample Size

| | Target population | Sampling | Sample Size |
|-------------------------------|-------------------|------------|-------------|
| Commercial State Corporations | 55 | 100% | 55 |
| Total | 55 | 100 | 55 |

3.5 Data Collection

Data was obtained from secondary sources i.e. the financial statements of the commercial state corporations under analysis. The hedging information was obtained from two parts of the annual report: (a) Risk Management of Management’s discussion and analysis and (b) Financial instruments in notes of consolidated financial statement. The information in management’s Discussion and Analysis highlighted the hedging activities in the fiscal year. The information in financial instruments in notes of consolidated financial statement detailed hedging contracts throughout the year. A corporation was considered to engage in hedging if it explicitly states the derivative or hedging policy used in its financial statements.

3.6 Data Analysis

A multiple regression model was employed. A computer package SPSS (Statistical Package for the Social Sciences) version 22 was used to solve the multiple regression equation used in this study. The dependent variable was firm value. The independent variables as determinants

of firm value are firm size, profitability, leverage, growth options, and financial constraints. Firm value was regressed on hedging practice controlling for the financial factors considered to correlate firm value.

3.6.1 Analytical Model

The below model used

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

Where:

Y= Firm Value

X₁= Foreign Exchange risk

X₂= Firm size

X₃= Leverage

X₄= Growth Options

X₅= Financial constraints

ε = Error Term

The independent and dependent variables were calculated as follows

Table 3.1 Calculation of Dependent and Independent Variables

| Variable | Definition | Formula |
|----------------|-----------------------|--|
| Y | Firm Value | Return on asset = Net income / Total Assets |
| X ₁ | Foreign Exchange Risk | Transaction (base year) / Transaction (current year) or/and exchange rate (base year) / exchange rate (current year) |
| X ₂ | Firm size | Total Assets Log |
| X ₃ | Leverage | Total Liabilities/Total Equity |
| X ₄ | Growth Options | Net Capital Spending/Sales |
| X ₅ | Financial constraints | (Cash + Receivables)/Current Liabilities |

3.6.2 Analysis of Variance

In conducting this research study Analysis of variation was done. This is a statistical method for making simultaneous comparisons between two or more means to yield values that can be tested to determine whether a significant relation exists between variables (Cooper, 2000). It is a test of the hypothesis that the variation in an experiment is no greater than due to normal variation of individual characteristics and error in their measurement. It involves the determination of the Regression residual and total sum of squares. Regression sum of squares is a measure of how well a regression model represents the data being modelled. Residual sum of squares measures the discrepancy between the data and an estimation model. The total sum of squares is a summation of the residual sum of squares and the regression sum of squares and measures how much variation there is in the observed data. Each sum of squares is associated

with a certain degree of freedom computed from number of subjects and groups. A mean square is also computed by dividing the sum of squares by the appropriate degrees of freedom.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the information processed from the data collected during the study on the effects of foreign exchange risks on firm value for commercial state corporations in Kenya. The sample composed of all the 55 commercial state corporations as per the Report of The Presidential Task force on Parastatal Reforms (2013). The descriptive analysis helps the study to describe the relevant aspects of the phenomena under consideration and provide detailed information about each relevant variable. For the inferential analysis, the panel data regression analysis was used. While the Pearson correlation measures the degree of association between variables under consideration, the regression estimates the relationship between foreign exchange risk management and financial performance of commercial states corporations in Kenya. Furthermore, in examining if the foreign exchange risk management is significantly different from that of MFIs' financial performance, the F- test was used.

4.2 Descriptive Statistics

Table 4.1: Summary of the study variables

| | 2009 | 2010 | 2011 | 2012 | 2013 | Mean | Standard Deviation |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------------|
| Firm Value | 0.1263 | 0.448049 | 0.470732 | 0.256341 | 0.152927 | 0.2909 | 0.16151 |
| Foreign Exchange risk | 2.7989 | 2.560732 | 2.828293 | 3.103415 | 2.890244 | 2.8363 | 0.19472 |
| Firm size | 4.0405 | 2.369024 | 3.608293 | 2.95 | 1.773171 | 2.9482 | 0.91446 |
| Leverage | 0.9293 | 0.972683 | 1.003902 | 1.031951 | 1.147561 | 1.0171 | 0.08231 |
| Growth Options | 0.8720 | 0.837317 | 0.843415 | 0.826585 | 0.703659 | 0.8166 | 0.06532 |
| Financial constraints | 0.0824 | 0.08439 | 0.087561 | 0.079756 | 0.142927 | 0.0954 | 0.02671 |

From the summary in Table 4.1, firm value had been rising from 2009 and recorded a high in 2011 (0.470732) then decreased in 2012 and recorded a low of 0.152927 in 2013. Foreign exchange risk posted mixed results in the period with the highest in 2012 at 3.103415. Firm size was highest in 2009 at 4.0405 and lowest in 2013 at 1.77317 a mean score of 2.9482. Leverage has been in an increasing trend with 2013 recording a high of 1.147561. There were very minimal a change in growth options same as financial constraints which had a mean score of 0.8166 and 0.0954 respectively.

4.3 Regression Results

The study conducted a multiple regression on the effects of foreign exchange risks on firm value for commercial state corporations in Kenya. Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the

independent variables or the percentage of variation in the dependent variable (Firm Value) that is explained by all the five independent variables (Foreign Exchange risk, Firm size, Leverage, Growth Options and Financial constraints).

The below model used

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

Where:

Y = Firm Value

X₁ = Foreign Exchange risk

X₂ = Firm size

X₃ = Leverage

X₄ = Growth Options

X₅ = Financial constraints

ε = Error Term

Table 4.2: Results of multiple regression between firm value of commercial state corporations in Kenya and the combined effect of the selected predictors

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------|----------|-------------------|----------------------------|
| 1 | 0.829 | 0.687 | 0.654 | 0.163 |

Source: Author (2014)

- a. Predictors: (Constant), Foreign Exchange risk, Firm size, Leverage, Growth Options and Financial constraints
- b. Dependent Variable: Firm Value

The five independent variables that were studied, explain only 65.4% of the firm value of commercial state corporations in Kenya as represented by the adjusted R^2 . This therefore means the five variables contribute to 65.4% of firm value of commercial state corporations in Kenya, while other factors not studied in this research contributes 34.6% of firm value of commercial state corporations in Kenya. Therefore, further research should be conducted to investigate the other (34.6%) factors influencing firm value of commercial state corporations in Kenya.

Table 4.3: Summary of One-Way ANOVA results of the regression analysis between firm value of commercial state corporations in Kenya and predictor variables

Regression analysis also produced correlation, coefficient of determination and analysis of variance (ANOVA). Correlation sought to show the nature of relationship between dependent and independent variables and coefficient of determination showed the strength of the relationship. Analysis of variance was done to show whether there is a significant mean difference between dependent and independent variables. The ANOVA was conducted at 95% confidence level.

| Model | Sum of Squares | df | Mean Square | F | Sig. | |
|-------|----------------|-------|-------------|-------|-------|-------|
| 1 | Regression | 2.453 | 5 | 0.613 | 9.431 | 0.001 |
| | Residual | 1.12 | 49 | 0.029 | | |
| | Total | 3.573 | 54 | | | |

Source: Author (2014)

- a. Predictors: (Constant), Foreign Exchange risk, Firm size, Leverage, Growth Options and Financial constraints
- b. Dependent Variable: Firm Value

ANOVA statistics was conducted to determine the differences in the means of the dependent and independent variables thus show whether a relationship exists between the two.

From the ANOVA statistics in table 4.3, the processed data, which are the population parameters, had a significance level of 0.0.001 which shows that the data is ideal for making a conclusion on the population's parameter. The F calculated at 5% Level of significance was 9.431. Since F calculated is greater than the F critical (value = 2.40), this shows that the overall model was significant i.e. there is a significant relationship between firm value and its determinants.

Table 4.4: Regression coefficients of the relationship between firm value of commercial state corporations in Kenya and the five predictive variables

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|--|-----------------------------|------------|---------------------------|--------|--------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 0.645 | 0.311 | | 2.074 | 0.0447 |
| | Foreign Exchange risk | 0.423 | 0.409 | 0.354 | 2.556 | 0.0371 |
| | Firm size | 0.736 | 0.151 | 0.529 | 4.874 | 0.0186 |
| | Leverage | 0.621 | 0.145 | 0.384 | 3.593 | 0.0304 |
| | Growth Options | 0.516 | 0.137 | 0.476 | 3.903 | 0.0268 |
| | Financial constraints | -0.023 | 0.009 | 0.004 | -2.556 | 0.0371 |
| | Dependent variable: Firm value of commercial state corporations in Kenya | | | | | |

Source: Author (2014)

The coefficient of regression in table 4.4 above was used in coming up with the model below:

$$FV=0.645 + 0.423FER+ 0.736FS+ 0.621L+ 0.516GO-0.023FC$$

Where FV is firm value, FER is Financial exchange risk, FS is Firm size, L is Leverage, GO is Growth options and FC is Financial constraints. According to the model, all the variables were significant as their significance value was less than 0.05. The five variables (Foreign Exchange risk, Firm size, Leverage, Growth Options and Financial constraints) were positively or negatively correlated with firm value of commercial state corporations in Kenya. From the model, taking all factors (Foreign Exchange risk, Firm size, Leverage, Growth Options and

Financial constraints) constant at zero, firm value of commercial state corporations in Kenya was 0.645. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in foreign exchange risk will lead to a 0.423 increase in firm value of commercial state corporations in Kenya, a unit increase in firm size will lead to a 0.736 increase in firm value of commercial state corporations in Kenya, a unit increase in leverage will lead to a 0.621 increase in firm value of commercial state corporations in Kenya, a unit increase in growth options will lead to a 0.516 increase in firm value of commercial state corporations in Kenya while a unit increase in financial constraints will lead to a -0.023 decrease in firm value of commercial state corporations in Kenya. This infers that firm size has the most effect to the firm value of commercial state corporations in Kenya.

4.4 Summary and Interpretation of Findings

Foreign exchange risk constitutes one of the most common forms of risk that firms in the international arena encounter and, in recent years, the management of this risk has become one of the key factors in overall financial management. The risk helps investors determine appropriate expected returns from investment, firm value is thus affected by the risk a firm is exposed to since it affects the size of future cash flows. Appreciating foreign exchange risks and measuring firm value is a crucial step to better managing and improving the performance of firms. Companies that choose not to manage foreign exchange risk may be assuming that exchange rates will remain at their present levels or move in a direction that will be favourable to the company. The study sought to investigate the effects of foreign exchange risks on firm value for commercial state corporations in Kenya. The study applied a descriptive study that was aimed at establishing the effect of foreign exchange risk on the value of a firm, the research design used was cross-sectional design, which was a study in which data was gathered systematically over a period of time in order to answer a research question.

The study targeted 55 commercial state corporations as per the Report of The Presidential Task force on Parastatal Reforms. Data was obtained from secondary sources such as the financial statements of the commercial state corporations under analysis. A multiple regression model was employed. A computer package SPSS (Statistical Package for the Social Sciences) version 22 was used to solve the multiple regression equation used in this study. From the regression model, the study found out that there were factors influencing the firm value of commercial state corporations in Kenya, which are foreign exchange risk, firm size, leverage, growth options and financial constraints. They influenced firm value of commercial state corporations in Kenya positively or negatively. The study found out that the intercept was 0.645 for all years. The five independent variables that were studied (Foreign Exchange risk, Firm size, Leverage, Growth Options and Financial constraints) explain a substantial 65.4% of firm value of commercial state corporations in Kenya as represented by adjusted R^2 (0.654). The study therefore concludes that foreign exchange risk positively and significantly influences the firm value for commercial state corporations in Kenya.

The study established that the coefficient for foreign exchange risk was 0.423, meaning that foreign exchange risk positively and significantly influenced the firm value of commercial state corporations in Kenya. This is in line with Lim (2006) who state that firms that have robust currency risk management frameworks have higher firm value. The main characteristics of good risk management identified in these studies include; leadership of the risk team, adequate compensation of the risk team and compliance with laws and best practice. There is a view that companies with risk management departments are better corporate performers. In recent times on the contrary, emphasis has geared towards general employee training in currency risk management. Oxelheim (1997) contend that risk management departments without well trained personnel to man the departments are less effective and the company will many a time be prone to such currency risks.

According to Jorion (2011) changes in exchange rate can influence firm current and future expected cash flows and ultimately, stock prices. The direction and magnitude of changes in exchange rate on firms value are a function of a firm's corporate hedging policy which indicates whether the firm utilizes operational hedges and financial hedges to manage currency exposure and the structure of its foreign currency cash flows. Management of foreign exchange risk increases shareholders value through enhanced business performance and the reduction of the firms' cost of capital. Since market value is conditioned by the company results, the level of risk exposure can cause changes in its market value.

The study also deduced that firm size positively influenced firm value of commercial state corporations in Kenya as it had positive coefficient (0.736). This correlates with Eiteman (2006) who argues that there is a high correlation between firm size and cash flow which is the foundation for calculating market capitalization. The size of a company can have a positive effect on financial performance because larger firms can use that advantage to get some financial benefits in business relations hence greater firm value. Large organizations can obtain cheap funding hence a lower rate of capital. This generates a higher market capitalization rate.

The study further found out that the coefficient for leverage was 0.621 meaning that leverage positively and significantly influenced the firm value of commercial state corporations in Kenya. This is in line with Giddy and Dufey (1992) who state that higher financial leverage is generally associated with high asset base, means lower average cost of capital and hence higher value. As such businesses can command a respectable price if a cash flow lender can be found, or if the Seller is willing to finance the transaction. According to free cash flow hypothesis, debt decreases the amount of cash available to managers, hence reducing their possibilities for wasting corporate resources (Lim, 2006). In such way leverage serves as a commitment and incentive mechanism it induces managers to pay out cash to firm's investors and basically minimizes agency costs of external equity (consumption of perquisites, shirking from duties

and undertaking negative NPV projects). Eventually, issuing debt instead of equity lowers agency costs and therefore increases firm value (Simwaka, 2004).

The study also found out that growth options positively and significantly influenced the firm value of commercial state corporations in Kenya as it had a positive coefficient of 0.516. This concurs with Adler and Dumas (2010) who argued that future investment affect firm value. A firm with higher growth options will have a higher value as it's favorable to investors who have higher prospects of recovering their investment. If a firm has lower growth options its likely to be erased by competitors leading to eventual collapse hence a lower value.

Further, the study established that the coefficient for financial constraints was-0.023, this indicates that financial constraints significantly and positively influence the firm value of commercial state corporations in Kenya. This is in line with Shapiro (2006) who posits that Firms facing financial constraints are unlikely to meet their investment obligations. The firm may be paying out more than it is receiving and more likely to go bankrupt. This implies that in the long run the chances of survival of the company are low and this would yield a lower valuation. On the contrary firms with adequate cash flow are likely to meet their financial obligations on time and hence have a higher value.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The study findings show that, firm value had been rising from 2009 and recorded a high in 2011 (0.470732) then decreased in 2012 and recorded a low of 0.152927 in 2013. Foreign exchange risk posted mixed results in the period with the highest in 2012 at 3.103415. Firm size was highest in 2009 at 4.0405 and lowest in 2013 at 1.77317 a mean score of 2.9482. Leverage has been in an increasing trend with 2013 recording a high of 1.147561. There were very minimal a change in growth options same as financial constraints which had a mean score of 0.8166 and 0.0954 respectively.

The five independent variables that were studied, explain only 65.4% of the firm value of commercial state corporations in Kenya as represented by the adjusted R^2 . This therefore means the five variables contribute to 65.4% of firm value of commercial state corporations in Kenya, while other factors not studied in this research contributes 34.6% of firm value of commercial state corporations in Kenya. Therefore, further research should be conducted to investigate the other (34.6%) factors influencing firm value of commercial state corporations in Kenya.

From the ANOVA statistics, the processed data, which are the population parameters, had a significance level of 0.0001 which shows that the data is ideal for making a conclusion on the population's parameter. The F calculated at 5% Level of significance was 9.431. Since F calculated is greater than the F critical (value = 2.40), this shows that the overall model was significant i.e. there is a significant relationship between firm value and its determinants. Where FV is firm value, FER is Financial exchange risk, FS is Firm size, L is Leverage, GO is Growth options and FC is Financial constraints. According to the model, all the variables were

significant as their significance value was less than 0.05. The five variables (Foreign Exchange risk, Firm size, Leverage, Growth Options and Financial constraints) were positively or negatively correlated with firm value of commercial state corporations in Kenya. From the model, taking all factors (Foreign Exchange risk, Firm size, Leverage, Growth Options and Financial constraints) constant at zero, firm value of commercial state corporations in Kenya was 0.645.

5.2 Conclusions

The data findings analysed shows that taking all other independent variables at zero, a unit increase in foreign exchange risk will lead to an increase in firm value of commercial state corporations in Kenya, a unit increase in firm size will lead to an increase in firm value of commercial state corporations in Kenya, a unit increase in leverage will lead to an increase in firm value of commercial state corporations in Kenya, a unit increase in growth options will lead to an increase in firm value of commercial state corporations in Kenya while a unit increase in financial constraints will lead to a decrease in firm value of commercial state corporations in Kenya. This infers that firm size has the most effect to the firm value of commercial state corporations in Kenya.

The five independent variables that were studied, explain only 65.4% of the firm value of commercial state corporations in Kenya as represented by the adjusted R^2 . This therefore means the five variables contribute to 65.4% of firm value of commercial state corporations in Kenya, while other factors not studied in this research contributes 34.6% of firm value of commercial state corporations in Kenya. Therefore, further research should be conducted to investigate the other (34.6%) factors influencing firm value of commercial state corporations in Kenya

5.3 Recommendations to Policy and Practice

Based on this research foreign exchange risk is inherent in the operations of firms and managing it adds significant value to the firm. Those tasked with managing the risks should thus first understand the risks they are exposed to by developing a risk profile. This requires an examination of both the immediate risks from competition and product market changes as well as the more indirect effects of macro - economic forces. This will enable firms take on the various options of either letting the risk pass through, protecting themselves by using the hedging instruments or intentionally increasing exposure to some of the risks because the feeling of having significant advantages over the competition.

Beyond methodologies, data, and technology capabilities, effectiveness in foreign risk management may require enhancing or, in some cases, creating a pervasive risk-awareness culture throughout the organization and creating an environment with incentives that sustain this culture over time.

Executive management should provide leadership, with oversight and input from the board of directors, towards enhancing and making more transparent the institution's risk strategy, risk appetite, and risk management framework.

The management could also infuse risk management responsibilities throughout the organization and these integrated into performance goals and compensation decisions to achieve value.

5.4 Limitations of the Study

The scope of the study focused on commercial state corporations in Kenya and hence the findings may not be representative of other organizations outside this scope. Although most corporations manage their exposure to foreign exchange risk, they do not disclose what

percentage of exposure is hedged hence it was difficult to determine the level of foreign risk exposure hedged by such corporations.

It was difficult to obtain data from commercial state corporations in Kenya as they do not break down their assets and liabilities into the fixed and current components. This information was vital in calculating the variable financial constraints, most information was obtained from State Corporation Advisory Committee, which receives financial reports from all state corporations, the rest was through Financial reports as published by the state agencies.

Time allocated for the study was insufficient while holding a full time job and studying part time. This was encountered during the collection of material as well as the data to see the study success. However the researcher tried to conduct the study within the time frame as specified.

Another limitation is developing a model which would enable the researcher to study the relationship between the various variables. When developing this model, there was a great need to define the dependent variables and independent variables. If the model is not correct, the process of analysis may not give the right results. In this case, multiple linear regression was used since there were multiple variables which required to be studied.

5.5 Suggestions of Further Studies

This study focuses on the effect of foreign exchange risk on firm value. Future studies should focus on whether other types of hedging affect firm value. This would help management in deciding to what extent they are exposed to risk, what areas of risk to focus on as well as what measures should be put in place to hedge those risks. Management is thus aware of what form of hedging is beneficial and will lead to increased firm value.

Future research can also seek to establish whether the form of hedging practice used by firms impacts the firm values. This research study generalized all the forms of hedging under one

title foreign exchange risk management. Future research should explore whether the type of hedging strategy used affects firm value. For instance, whether firms that hedge using commodity derivatives have higher values than those that use currency derivatives.

Researchers can also seek to establish whether cash flow volatility has an effect on the firm value. Although most firms hedge, the degree of their cash flow volatility is different where some have high cash flows and hedge a small portion of it. Other however have low levels of cash flows but are very prone to risk thus have to hedge a substantial amount. Researchers should thus seek to determine the effect of cash flow volatility on firm value.

Additionally, it would be ideal to research on how foreign exchange risk management compares to other risk management, specifically credit risk management and financial risk management to the financial performance of all parastatals in Kenya.

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APPENDICES

Appendix I: List of Commercial State Corporation

1. Agro-Chemical and Food Company
2. Kenya Meat Commission Kenya Meat
3. Muhoroni Sugar Company Ltd
4. Nyayo Tea Zones
5. South Nyanza Sugar Company Limited
6. Chemilil Sugar Company Ltd
7. Nzoia Sugar Company Ltd
8. Simlaw Seeds Kenya
9. Simlaw Seeds Tanzania
10. Simlaw Seeds Uganda
11. Kenya National Trading Corporation (KNTC)
12. Kenya Safari Lodges and Hotels Ltd.
13. Golf Hotel Kakamega
14. Kabarnet Hotel
15. Mt Elgon Lodge
16. Sunset Hotel Kisumu
17. Jomo Kenyatta Foundation
18. Jomo Kenyatta University
19. Kenya Literature Bureau
20. Rivatex (East Africa) Ltd.
21. University of Nairobi
22. University of Nairobi Press

24. Development Bank of Kenya Ltd.
25. Kenya Wine Agencies Ltd (KWAL)
26. KWA Holdings Companies
27. New Kenya Co-operative Creameries
28. Yatta Vineyards Ltd Companies
29. National Housing Corporation
30. Research Development Unit Company Ltd
31. Consolidated Bank of Kenya
32. Kenya National Assurance Co.
33. Kenya Reinsurance Corporation Ltd
34. Kenya National Shipping Line
35. Kenya Animal Genetics Resource Centre
36. Kenya Seed Company (KSC)
37. Kenya Veterinary Vaccine Production Institute
38. National Cereals & Produce Board (NCPB)
39. Kenyatta International Convention Centre
40. Geothermal Development Company (GDC)
41. Kenya Electricity Generating Company (KENGEN)
42. Kenya Electricity Transmission Company (KETRACO)
43. Kenya Pipeline Company (KPC)
44. Kenya Power and Lighting Company (KPLC)
45. National Oil Corporation of Kenya
46. National Water Conservation and Pipeline
47. Numerical Machining Complex
48. Kenya Broadcasting Corporation

49. Postal Corporation of Kenya
50. Kenya Development Bank
51. Kenya EXIM Bank
52. Kenya Post Office Savings Bank
53. Kenya Airports Authority
54. Kenya Ports Authority
55. Kenya Railways Corporation (KRC)

Appendix I: Raw Data –Year 2009

| | Foreign Exchange risk | Firm size | Leverage | Growth Options | Financial constraints | Firm Value |
|-----|--------------------------------------|----------------------|-----------------|---------------------------|----------------------------------|-----------------------|
| 1. | 1.18 | 3.34 | 0.87 | 0.90 | 0.10 | 0.09 |
| 2. | 0.91 | 5.39 | 0.64 | 0.96 | 0.06 | 0.12 |
| 3. | 1.82 | 1.77 | 1.06 | 0.67 | 0.01 | 0.07 |
| 4. | 0.78 | 2.14 | 0.35 | 0.94 | 0.01 | 0.10 |
| 5. | 1.31 | 9.67 | 0.90 | 0.95 | 0.03 | 0.05 |
| 6. | 1.57 | 21.62 | 0.96 | 0.97 | 0.01 | 0.22 |
| 7. | 1.45 | 7.31 | 0.76 | 0.97 | 0.07 | 0.24 |
| 8. | 0.75 | 9.35 | 1.03 | 0.94 | 0.14 | 0.08 |
| 9. | 5.86 | 6.32 | 1.30 | 0.94 | 0.03 | 0.09 |
| 10. | 6.30 | 2.90 | 1.18 | 0.83 | 0.35 | 0.20 |
| 11. | 1.80 | 1.52 | 0.54 | 0.62 | 0.03 | 0.22 |
| 12. | 3.02 | 2.34 | 0.86 | 0.82 | 0.03 | 0.20 |
| 13. | 5.05 | 2.78 | 1.07 | 0.91 | 0.04 | 0.05 |
| 14. | 4.13 | 4.54 | 1.70 | 0.89 | 0.12 | 0.22 |
| 15. | 2.38 | 4.96 | 0.81 | 0.95 | 0.02 | 0.10 |
| 16. | 1.30 | 6.14 | 1.37 | 0.92 | 0.04 | 0.34 |
| 17. | 8.93 | 15.18 | 1.08 | 0.97 | 0.10 | 0.01 |
| 18. | 2.15 | 2.31 | 0.72 | 0.88 | 0.02 | 0.26 |

| | | | | | | |
|-----|------|------|------|------|------|------|
| 19. | 4.65 | 5.17 | 1.20 | 0.94 | 0.07 | 0.02 |
| 20. | 0.44 | 1.75 | 1.10 | 0.56 | 0.02 | 0.01 |
| 21. | 3.74 | 2.27 | 0.87 | 0.92 | 0.08 | 0.06 |
| 22. | 0.55 | 1.59 | 0.94 | 0.97 | 0.01 | 0.17 |
| 23. | 0.93 | 2.55 | 0.76 | 0.97 | 0.26 | 0.24 |
| 24. | 2.07 | 1.44 | 1.20 | 0.93 | 0.02 | 0.07 |
| 25. | 8.38 | 2.04 | 1.20 | 0.93 | 0.01 | 0.07 |
| 26. | 1.95 | 1.95 | 0.75 | 0.71 | 0.06 | 0.03 |
| 27. | 3.21 | 1.08 | 0.53 | 0.59 | 0.17 | 0.05 |
| 28. | 5.18 | 4.08 | 0.61 | 0.83 | 0.24 | 0.07 |
| 29. | 1.49 | 2.63 | 0.90 | 0.90 | 0.07 | 0.06 |
| 30. | 1.19 | 3.58 | 1.63 | 0.87 | 0.07 | 0.07 |
| 31. | 0.86 | 1.59 | 0.94 | 0.97 | 0.01 | 0.08 |
| 32. | 1.75 | 2.55 | 0.76 | 0.97 | 0.26 | 0.01 |
| 33. | 1.84 | 1.44 | 1.20 | 0.93 | 0.02 | 0.13 |
| 34. | 0.79 | 2.04 | 1.20 | 0.93 | 0.01 | 0.24 |
| 35. | 7.33 | 1.95 | 0.75 | 0.71 | 0.06 | 0.02 |
| 36. | 4.86 | 1.08 | 0.53 | 0.59 | 0.17 | 0.23 |
| 37. | 3.02 | 4.08 | 0.61 | 0.83 | 0.24 | 0.06 |
| 38. | 3.67 | 4.27 | 0.26 | 0.95 | 0.24 | 0.01 |
| 39. | 3.61 | 3.09 | 0.85 | 0.85 | 0.00 | 0.01 |
| 40. | 1.83 | 1.70 | 0.96 | 0.96 | 0.05 | 0.55 |
| 41. | 0.73 | 2.16 | 1.15 | 0.91 | 0.03 | 0.26 |
| 42. | 3.17 | 1.26 | 0.89 | 0.85 | 0.11 | 0.13 |

| | | | | | | |
|----|------|-------|------|------|------|------|
| 43 | 3.19 | 1.12 | 0.89 | 0.85 | 0.11 | 0.13 |
| 44 | 3.21 | 0.99 | 0.89 | 0.85 | 0.11 | 0.13 |
| 45 | 3.23 | 0.86 | 0.89 | 0.85 | 0.11 | 0.13 |
| 46 | 3.25 | 0.73 | 0.88 | 0.85 | 0.11 | 0.13 |
| 47 | 3.26 | 0.59 | 0.88 | 0.85 | 0.12 | 0.13 |
| 48 | 3.28 | 0.46 | 0.88 | 0.85 | 0.12 | 0.13 |
| 49 | 3.30 | 0.33 | 0.88 | 0.84 | 0.12 | 0.13 |
| 50 | 3.32 | 0.20 | 0.88 | 0.84 | 0.12 | 0.13 |
| 51 | 3.33 | 0.06 | 0.87 | 0.84 | 0.12 | 0.13 |
| 52 | 3.36 | 0.31 | 0.87 | 0.86 | 0.10 | 0.18 |
| 53 | 3.39 | 0.20 | 0.87 | 0.86 | 0.10 | 0.18 |
| 54 | 3.42 | 0.09 | 0.87 | 0.86 | 0.10 | 0.18 |
| 55 | 3.45 | -0.02 | 0.87 | 0.86 | 0.10 | 0.19 |

Table Year 2010

| No | Foreign Exchange risk | Firm size | Leverage | Growth Options | Financial constraints | Firm Value |
|-----|-----------------------------|-----------|----------|-------------------|--------------------------|------------|
| 1. | 1.14 | 4.58 | 0.79 | 0.91 | 0.05 | 0.02 |
| 2. | 0.78 | 2.78 | 0.61 | 0.96 | 0.07 | 0.03 |
| 3. | 1.4 | 1.08 | 1.11 | 0.64 | 0.06 | 0.05 |
| 4. | 1.12 | 2.21 | 0.33 | 0.95 | 0.07 | 0.03 |
| 5. | 1.36 | 2.27 | 0.87 | 0.92 | 0.08 | 0.21 |
| 6. | 1.79 | 1.59 | 0.94 | 0.97 | 0.01 | 0.95 |
| 7. | 1.29 | 2.55 | 0.76 | 0.97 | 0.26 | 0.63 |
| 8. | 0.82 | 1.44 | 1.2 | 0.93 | 0.02 | 0.94 |
| 9. | 5.85 | 2.04 | 1.2 | 0.93 | 0.01 | 0.9 |
| 10. | 3.41 | 1.95 | 0.75 | 0.71 | 0.06 | 0.97 |
| 11. | 1.43 | 4.09 | 1.03 | 0.92 | 0.21 | 0.95 |
| 12. | 3.17 | 1.19 | 1.33 | 0.92 | 0 | 0.93 |
| 13. | 4.25 | 4.46 | 1.2 | 0.93 | 0.09 | 0.92 |
| 14. | 2.61 | 1.85 | 1.81 | 0.62 | 0.13 | 0.62 |
| 15. | 2.18 | 1.6 | 0.81 | 0.71 | 0.02 | 0.68 |
| 16. | 1.42 | 4.33 | 0.65 | 0.94 | 0.03 | 0.78 |
| 17. | 5.27 | 6.44 | 1.1 | 0.92 | 0.07 | 0.56 |
| 18. | 1.84 | 1.83 | 1.07 | 0.95 | 0.19 | 0.84 |
| 19. | 4.61 | 5.44 | 0.68 | 0.88 | 0.09 | 0.94 |

| | | | | | | |
|-----|------|------|------|------|------|------|
| 20. | 0.37 | 1.89 | 1.51 | 0.87 | 0.03 | 0.91 |
| 21. | 4.27 | 1.05 | 0.96 | 0.58 | 0 | 0.9 |
| 22. | 0.61 | 1.73 | 1.28 | 0.93 | 0 | 0.86 |
| 23. | 0.75 | 1.72 | 1.68 | 0.79 | 0 | 0.86 |
| 24. | 1.91 | 1.95 | 0.75 | 0.71 | 0.06 | 0.05 |
| 25. | 7.82 | 1.08 | 0.53 | 0.59 | 0.17 | 0.18 |
| 26. | 5.54 | 0.55 | 1.48 | 0.8 | 0.35 | 0.15 |
| 27. | 5.31 | 0.84 | 0.84 | 0.56 | 0.04 | 0.24 |
| 28. | 4.1 | 1.08 | 0.53 | 0.59 | 0.17 | 0.07 |
| 29. | 3.21 | 4.08 | 0.61 | 0.83 | 0.24 | 0.1 |
| 30. | 1.59 | 1.6 | 0.81 | 0.71 | 0.02 | 0.06 |
| 31. | 0.79 | 1.4 | 0.81 | 0.65 | 0.13 | 0.23 |
| 32. | 5.19 | 2.38 | 0.83 | 0.88 | 0.03 | 0.12 |
| 33. | 3.86 | 1.19 | 1.33 | 0.92 | 0 | 0.03 |
| 34. | 0.89 | 4.46 | 1.2 | 0.93 | 0.09 | 0.09 |
| 35. | 3.25 | 1.59 | 0.94 | 0.97 | 0.01 | 0.21 |
| 36. | 0.89 | 2.55 | 0.76 | 0.97 | 0.26 | 0.32 |
| 37. | 2.09 | 1.44 | 1.2 | 0.93 | 0.02 | 0.18 |
| 38. | 3.26 | 3.09 | 0.85 | 0.85 | 0 | 0.06 |
| 39. | 1.81 | 1.7 | 0.96 | 0.96 | 0.05 | 0.28 |
| 40. | 0.93 | 4.09 | 1.03 | 0.92 | 0.21 | 0.14 |
| 41. | 0.81 | 1.95 | 0.75 | 0.71 | 0.06 | 0.38 |
| 42. | 0.71 | 1.63 | 1.60 | 0.75 | 0.00 | 0.82 |
| 43. | 1.81 | 1.85 | 0.71 | 0.67 | 0.06 | 0.05 |

| | | | | | | |
|----|------|------|------|------|------|------|
| 44 | 7.43 | 1.03 | 0.50 | 0.56 | 0.16 | 0.17 |
| 45 | 5.26 | 0.52 | 1.41 | 0.76 | 0.33 | 0.14 |
| 46 | 5.04 | 0.80 | 0.80 | 0.53 | 0.04 | 0.23 |
| 47 | 3.90 | 1.03 | 0.50 | 0.56 | 0.16 | 0.07 |
| 48 | 3.05 | 3.88 | 0.58 | 0.79 | 0.23 | 0.10 |
| 49 | 1.51 | 1.52 | 0.77 | 0.67 | 0.02 | 0.06 |
| 50 | 0.75 | 1.33 | 0.77 | 0.62 | 0.12 | 0.22 |
| 51 | 4.93 | 2.26 | 0.79 | 0.84 | 0.03 | 0.11 |
| 52 | 3.67 | 1.13 | 1.26 | 0.87 | 0.00 | 0.03 |
| 53 | 0.85 | 4.24 | 1.14 | 0.88 | 0.09 | 0.09 |
| 54 | 3.09 | 1.51 | 0.89 | 0.92 | 0.01 | 0.20 |
| 55 | 0.85 | 2.42 | 0.72 | 0.92 | 0.25 | 0.30 |

Table of Year 2011

| No | Foreign Exchange risk | Firm size | Leverage | Growth Options | Financial constraints | Firm Value |
|----|-----------------------|-----------|----------|----------------|-----------------------|------------|
| 1. | 1.77 | 2.05 | 0.95 | 0.9 | 0.02 | 0.11 |
| 2. | 0.61 | 1.77 | 0.54 | 0.95 | 0.08 | 0.14 |
| 3. | 1.09 | 1.11 | 1.06 | 0.63 | 0.01 | 0.02 |
| 4. | 0.58 | 3.45 | 0.27 | 0.94 | 0.13 | 0.13 |
| 5. | 1.96 | 1.01 | 0.91 | 0.9 | 0.24 | 0.09 |
| 6. | 1.58 | 16.54 | 0.97 | 0.97 | 0.02 | 0.08 |

| | | | | | | |
|-----|------|------|------|------|------|------|
| 7. | 0.98 | 1.07 | 0.92 | 0.95 | 0.23 | 0.03 |
| 8. | 0.89 | 1.73 | 1.28 | 0.93 | 0 | 0.27 |
| 9. | 9.52 | 1.35 | 1.26 | 0.92 | 0.01 | 0.19 |
| 10. | 6.39 | 1.67 | 2.03 | 0.62 | 0.01 | 0.09 |
| 11. | 1.49 | 1.65 | 0.61 | 0.68 | 0.55 | 0.14 |
| 12. | 5.78 | 2.87 | 0.68 | 0.78 | 0.26 | 0.26 |
| 13. | 1.88 | 0.6 | 0.98 | 0.56 | 0.02 | 0.22 |
| 14. | 5.58 | 2.35 | 1.79 | 0.84 | 0.03 | 0.22 |
| 15. | 1.57 | 2.46 | 0.61 | 0.94 | 0.05 | 0.09 |
| 16. | 1.68 | 2.16 | 1.15 | 0.91 | 0.03 | 0.19 |
| 17. | 6.86 | 1.55 | 1.1 | 0.9 | 0.21 | 0.12 |
| 18. | 2.42 | 4.98 | 0.69 | 0.86 | 0.04 | 0.34 |
| 19. | 3.9 | 1.75 | 1.53 | 0.86 | 0.01 | 0.05 |
| 20. | 0.49 | 0.85 | 1.05 | 0.57 | 0.01 | 0.96 |
| 21. | 3.54 | 14.7 | 0.96 | 0.96 | 0.05 | 0.67 |
| 22. | 0.46 | 4.09 | 1.03 | 0.92 | 0.21 | 0.94 |
| 23. | 0.67 | 1.19 | 1.33 | 0.92 | 0 | 0.95 |
| 24. | 1.91 | 4.46 | 1.2 | 0.93 | 0.09 | 0.97 |
| 25. | 6.05 | 1.85 | 1.81 | 0.62 | 0.13 | 0.97 |
| 26. | 1.94 | 1.6 | 0.81 | 0.71 | 0.02 | 0.94 |
| 27. | 3.09 | 1.4 | 0.81 | 0.65 | 0.13 | 0.94 |
| 28. | 6.94 | 2.38 | 0.83 | 0.88 | 0.03 | 0.83 |
| 29. | 1.52 | 2.36 | 1.61 | 0.84 | 0.01 | 0.62 |
| 30. | 1.97 | 1.95 | 0.75 | 0.71 | 0.06 | 0.82 |

| | | | | | | |
|-----|------|-------|------|------|------|------|
| 31. | 1.95 | 1.08 | 0.53 | 0.59 | 0.17 | 0.91 |
| 32. | 2.34 | 4.08 | 0.61 | 0.83 | 0.24 | 0.89 |
| 33. | 2.69 | 2.63 | 0.9 | 0.9 | 0.07 | 0.95 |
| 34. | 1.13 | 3.58 | 1.63 | 0.87 | 0.07 | 0.92 |
| 35. | 1.78 | 4.33 | 0.65 | 0.94 | 0.03 | 0.97 |
| 36. | 2.93 | 6.44 | 1.1 | 0.92 | 0.07 | 0.88 |
| 37. | 6.15 | 1.83 | 1.07 | 0.95 | 0.19 | 0.94 |
| 38. | 3.82 | 2.14 | 0.35 | 0.94 | 0.01 | 0.35 |
| 39. | 5.12 | 9.67 | 0.9 | 0.95 | 0.03 | 0.03 |
| 40. | 1.98 | 21.62 | 0.96 | 0.97 | 0.01 | 0.03 |
| 41 | 0.96 | 1.59 | 0.94 | 0.97 | 0.01 | 0.04 |
| 42 | 2.23 | 4.58 | 0.63 | 0.79 | 0.04 | 0.31 |
| 43 | 3.59 | 1.61 | 1.41 | 0.79 | 0.01 | 0.05 |
| 44 | 0.45 | 0.78 | 0.97 | 0.52 | 0.01 | 0.88 |
| 45 | 3.26 | 13.52 | 0.88 | 0.88 | 0.05 | 0.62 |
| 46 | 0.42 | 3.76 | 0.95 | 0.85 | 0.19 | 0.86 |
| 47 | 0.62 | 1.09 | 1.22 | 0.85 | 0.00 | 0.87 |
| 48 | 1.76 | 4.10 | 1.10 | 0.86 | 0.08 | 0.89 |
| 49 | 5.57 | 1.70 | 1.67 | 0.57 | 0.12 | 0.89 |
| 50 | 1.78 | 1.47 | 0.75 | 0.65 | 0.02 | 0.86 |
| 51 | 2.84 | 1.29 | 0.75 | 0.60 | 0.12 | 0.86 |
| 52 | 6.38 | 2.19 | 0.76 | 0.81 | 0.03 | 0.76 |
| 53 | 1.40 | 2.17 | 1.48 | 0.77 | 0.01 | 0.57 |
| 54 | 1.81 | 1.79 | 0.69 | 0.65 | 0.06 | 0.75 |

| | | | | | | |
|----|------|------|------|------|------|------|
| 55 | 1.79 | 0.99 | 0.49 | 0.54 | 0.16 | 0.84 |
|----|------|------|------|------|------|------|

Table Year 2012

| No | Foreign Exchange risk | Firm size | Leverage | Growth Options | Financial constraints | Firm Value |
|-----|-----------------------------|-----------|----------|-------------------|--------------------------|------------|
| 1. | 1.87 | 2.15 | 0.9 | 0.91 | 0.04 | 0.03 |
| 2. | 0.59 | 10.77 | 0.66 | 0.95 | 0 | 0.11 |
| 3. | 0.78 | 1.18 | 0.85 | 0.63 | 0.07 | 0.14 |
| 4. | 0.48 | 4.27 | 0.26 | 0.95 | 0.24 | 0.02 |
| 5. | 2.65 | 3.09 | 0.85 | 0.85 | 0 | 0.35 |
| 6. | 1.95 | 1.7 | 0.96 | 0.96 | 0.05 | 0.03 |
| 7. | 0.89 | 4.09 | 1.03 | 0.92 | 0.21 | 0.03 |
| 8. | 0.89 | 1.19 | 1.33 | 0.92 | 0 | 0.04 |
| 9. | 7.52 | 4.46 | 1.2 | 0.93 | 0.09 | 0.12 |
| 10. | 3.45 | 1.85 | 1.81 | 0.62 | 0.13 | 0.02 |
| 11. | 2.31 | 1.6 | 0.81 | 0.71 | 0.02 | 0.04 |
| 12. | 3.78 | 1.4 | 0.81 | 0.65 | 0.13 | 0.1 |
| 13. | 4.69 | 2.38 | 0.83 | 0.88 | 0.03 | 0.02 |

| | | | | | | |
|-----|------|------|------|------|------|------|
| 14. | 2.89 | | | | | |
| | | 2.36 | 1.61 | 0.84 | 0.01 | 0.01 |
| 15. | 5.34 | | | | | |
| | | 3.12 | 0.57 | 0.93 | 0.06 | 0.01 |
| 16. | 1.94 | | | | | |
| | | 4.11 | 1.11 | 0.89 | 0.02 | 0.03 |
| 17. | 7.21 | | | | | |
| | | 1.72 | 1.68 | 0.79 | 0 | 0.01 |
| 18. | 7.57 | | | | | |
| | | 1.95 | 0.75 | 0.71 | 0.06 | 0.07 |
| 19. | 6.15 | | | | | |
| | | 1.08 | 0.53 | 0.59 | 0.17 | 0.14 |
| 20. | 0.78 | | | | | |
| | | 4.08 | 0.61 | 0.83 | 0.24 | 0.08 |
| 21. | 4.66 | | | | | |
| | | 2.63 | 0.9 | 0.9 | 0.07 | 0.03 |
| 22. | 0.46 | | | | | |
| | | 3.58 | 1.63 | 0.87 | 0.07 | 0.27 |
| 23. | 0.64 | | | | | |
| | | 4.33 | 0.65 | 0.94 | 0.03 | 0.19 |
| 24. | 1.36 | | | | | |
| | | 6.44 | 1.1 | 0.92 | 0.07 | 0.09 |
| 25. | 4.16 | | | | | |
| | | 1.83 | 1.07 | 0.95 | 0.19 | 0.14 |

| | | | | | | |
|-----|------|-------|------|------|------|------|
| 26. | 4.26 | | | | | |
| | | 1.19 | 1.33 | 0.92 | 0 | 0.26 |
| 27. | 1.49 | | | | | |
| | | 4.46 | 1.2 | 0.93 | 0.09 | 0.22 |
| 28. | 2.65 | | | | | |
| | | 1.85 | 1.81 | 0.62 | 0.13 | 0.22 |
| 29. | 4.21 | | | | | |
| | | 1.6 | 0.81 | 0.71 | 0.02 | 0.09 |
| 30. | 3.09 | | | | | |
| | | 1.4 | 0.81 | 0.65 | 0.13 | 0.19 |
| 31. | 1.14 | | | | | |
| | | 2.38 | 0.83 | 0.88 | 0.03 | 0.12 |
| 32. | 7.12 | | | | | |
| | | 2.36 | 1.61 | 0.84 | 0.01 | 0.34 |
| 33. | 1.17 | | | | | |
| | | 1.95 | 0.75 | 0.71 | 0.06 | 0.05 |
| 34. | 1.45 | | | | | |
| | | 1.08 | 0.53 | 0.59 | 0.17 | 0.94 |
| 35. | 3.26 | | | | | |
| | | 1.01 | 0.91 | 0.9 | 0.24 | 0.94 |
| 36. | 1.58 | | | | | |
| | | 16.54 | 0.97 | 0.97 | 0.02 | 0.83 |
| 37. | 5.59 | | | | | |
| | | 1.07 | 0.92 | 0.95 | 0.23 | 0.62 |

| | | | | | | |
|-----|------|------|------|------|------|------|
| 38. | 3.29 | | | | | |
| | | 1.73 | 1.28 | 0.93 | 0.06 | 0.82 |
| 39. | 9.52 | | | | | |
| | | 1.35 | 1.26 | 0.92 | 0.01 | 0.91 |
| 40. | 1.39 | | | | | |
| | | 1.67 | 2.03 | 0.62 | 0.01 | 0.89 |
| 41 | 1.02 | 1.95 | 0.75 | 0.71 | 0.06 | 0.95 |
| 42 | 2.15 | 1.49 | 0.75 | 0.66 | 0.02 | 0.04 |
| 43 | 3.52 | 1.30 | 0.75 | 0.60 | 0.12 | 0.09 |
| 44 | 4.36 | 2.21 | 0.77 | 0.82 | 0.03 | 0.02 |
| 45 | 2.69 | 2.19 | 1.50 | 0.78 | 0.01 | 0.01 |
| 46 | 4.97 | 2.90 | 0.53 | 0.86 | 0.06 | 0.01 |
| 47 | 1.80 | 3.82 | 1.03 | 0.83 | 0.02 | 0.03 |
| 48 | 6.71 | 1.60 | 1.56 | 0.73 | 0.00 | 0.01 |
| 49 | 7.04 | 1.81 | 0.70 | 0.66 | 0.06 | 0.07 |
| 50 | 5.72 | 1.00 | 0.49 | 0.55 | 0.16 | 0.13 |
| 51 | 0.73 | 3.79 | 0.57 | 0.77 | 0.22 | 0.07 |
| 52 | 4.33 | 2.45 | 0.84 | 0.84 | 0.07 | 0.03 |
| 53 | 0.43 | 3.33 | 1.52 | 0.81 | 0.07 | 0.25 |
| 54 | 0.60 | 4.03 | 0.60 | 0.87 | 0.03 | 0.18 |
| 55 | 1.26 | 5.99 | 1.02 | 0.86 | 0.07 | 0.08 |

Table of Year 2013

| NO | Foreign Exchange risk | Firm size | Leverage | Growth Options | Financial constraints | Firm Value |
|-----------|--------------------------------------|------------------|-----------------|---------------------------|----------------------------------|-------------------|
| 1. | 2.34 | 0.97 | 0.97 | 0.49 | 0.11 | 0.08 |
| 2. | 0.88 | 0.9 | 0.74 | 0.45 | 0.16 | 0.01 |
| 3. | 1.05 | 0.57 | 1.16 | 0.32 | 0.11 | 0.26 |
| 4. | 0.63 | 0.46 | 1.16 | 0.21 | 0 | 0.02 |
| 5. | 1.78 | 1.31 | 1 | 0.59 | 0.13 | 0.01 |
| 6. | 1.56 | 1.3 | 1.26 | 0.59 | 0.02 | 0.06 |
| 7. | 1.11 | 2.57 | 1.26 | 1.42 | 0.41 | 0.17 |
| 8. | 2.81 | 1.26 | 1.13 | 0.56 | 0.13 | 0.24 |
| 9. | 2.65 | 0.66 | 1.5 | 0.48 | 0.13 | 0.07 |
| 10. | 1.68 | 2.55 | 1.48 | 0.8 | 0.35 | 0.07 |
| 11. | 1.45 | 0.84 | 0.84 | 0.56 | 0.04 | 0.1 |
| 12. | 1.59 | 1.57 | 0.96 | 0.69 | 0.02 | 0.05 |
| 13. | 1.76 | 0.4 | 1.17 | 0.41 | 0.24 | 0.22 |
| 14. | 8.38 | 1.26 | 1.8 | 0.63 | 0.22 | 0.24 |
| 15. | 7.4 | 0.39 | 1.31 | 0.47 | 0.03 | 0.08 |
| 16. | 4.48 | 1.35 | 1.26 | 0.92 | 0.01 | 0.09 |
| 17. | 6.93 | 0.9 | 1.57 | 0.58 | 0.05 | 0.22 |
| 18. | 7.72 | 2.58 | 1.3 | 0.84 | 0.21 | 0.1 |
| 19. | 4.16 | 2.8 | 1.08 | 0.77 | 0.1 | 0.34 |

| | | | | | | |
|-----|------|------|------|------|------|------|
| 20. | 0.87 | 1.48 | 0.72 | 0.6 | 0.02 | 0.04 |
| 21. | 2.52 | 0.82 | 1.88 | 0.57 | 1.76 | 0.24 |
| 22. | 0.73 | 4.09 | 1.03 | 0.92 | 0.21 | 0.07 |
| 23. | 0.83 | 1.19 | 1.33 | 0.92 | 0 | 0.1 |
| 24. | 1.82 | 4.46 | 1.2 | 0.93 | 0.09 | 0.06 |
| 25. | 5.3 | 1.85 | 1.81 | 0.62 | 0.13 | 0.23 |
| 26. | 1.77 | 1.6 | 0.81 | 0.71 | 0.02 | 0.12 |
| 27. | 3.34 | 1.4 | 0.81 | 0.65 | 0.13 | 0.03 |
| 28. | 1.95 | 2.38 | 0.83 | 0.88 | 0.03 | 0.09 |
| 29. | 1.58 | 1.19 | 1.33 | 0.92 | 0 | 0.21 |
| 30. | 4.89 | 4.46 | 1.2 | 0.93 | 0.09 | 0.32 |
| 31. | 6.05 | 1.85 | 1.81 | 0.62 | 0.13 | 0.18 |
| 32. | 4.21 | 1.6 | 0.81 | 0.71 | 0.02 | 0.55 |
| 33. | 1.89 | 1.4 | 0.81 | 0.65 | 0.13 | 0.28 |
| 34. | 1.32 | 2.38 | 0.83 | 0.88 | 0.03 | 0.24 |
| 35. | 1.71 | 2.36 | 1.61 | 0.84 | 0.01 | 0.02 |
| 36. | 1.76 | 1.95 | 0.75 | 0.71 | 0.06 | 0.23 |
| 37. | 5.04 | 1.08 | 0.53 | 0.59 | 0.17 | 0 |
| 38. | 4.16 | 3.58 | 1.63 | 0.87 | 0.07 | 0.01 |
| 39. | 3.13 | 4.33 | 0.65 | 0.94 | 0.03 | 0.01 |
| 40. | 1.96 | 1.01 | 0.91 | 0.9 | 0.24 | 0.55 |
| 41. | 1.31 | 1.6 | 0.81 | 0.71 | 0.02 | 0.26 |
| 42. | 3.04 | 1.27 | 0.74 | 0.59 | 0.12 | 0.03 |
| 43. | 1.77 | 2.17 | 0.76 | 0.80 | 0.03 | 0.08 |

| | | | | | | |
|----|------|------|------|------|------|------|
| 44 | 1.44 | 1.08 | 1.21 | 0.84 | 0.00 | 0.19 |
| 45 | 4.45 | 4.06 | 1.09 | 0.85 | 0.08 | 0.29 |
| 46 | 5.51 | 1.68 | 1.65 | 0.56 | 0.12 | 0.16 |
| 47 | 3.83 | 1.46 | 0.74 | 0.65 | 0.02 | 0.50 |
| 48 | 1.72 | 1.27 | 0.74 | 0.59 | 0.12 | 0.25 |
| 49 | 1.20 | 2.17 | 0.76 | 0.80 | 0.03 | 0.22 |
| 50 | 1.56 | 2.15 | 1.47 | 0.76 | 0.01 | 0.02 |
| 51 | 1.60 | 1.77 | 0.68 | 0.65 | 0.05 | 0.21 |
| 52 | 4.59 | 0.98 | 0.48 | 0.54 | 0.15 | 0.00 |
| 53 | 3.79 | 3.26 | 1.48 | 0.79 | 0.06 | 0.01 |
| 54 | 2.85 | 3.94 | 0.59 | 0.86 | 0.03 | 0.01 |
| 55 | 1.78 | 0.92 | 0.83 | 0.82 | 0.22 | 0.50 |